Effects of dietary probiotics on the growth and feeding efficiency of red hybrid tilapia, Oreochromis sp., and subsequent resistance to Streptococcus agalactiae

ABSTRACT

An eight-week trial was performed to evaluate three commercial/prototype probiotics supplemented in red hybrid tilapia, Oreochromis sp. diets. Triplicate groups of tilapia were measured for growth performance, feeding efficiencies, and whole-body composition. After the feeding trial, duplicate groups of tilapia were assessed for their resistance to Streptococcus agalactiae over 23 days. Six diets were supplemented with 0.1% or 0.3% PB1 consisting of Bacillus subtilis, 0.1% or 0.3% PB2 consisting of B. licheniformis or 0.1% MPB consisting of Bacillus sp. and Pediococcus sp. Probiotics had no effect ($p > 0.05$) on growth or feeding efficiencies, although whole-body crude protein was significantly higher in the PB1 0.3% treatment. Tilapia in the probiotic treatments had a higher resistance to S. agalactiae and, with the exception of the PB2 0.1% diet, were all significantly higher than the control treatment. Although the tested probiotics were not growth promoters, dietary B. subtilis was the most effective prophylactic against pathogenic bacteria.

Keyword: Bacillus; Probiotics; Streptococcus agalactiae; Disease resistance; Tilapia